

Recovery Plan Action Status

Plan Name: Revised Recovery Plan for the `Alala (*Corvus hawaiiensis*)

Plan Status: Final Revision 1

Plan Date: 17-Apr-09

Lead Agency: USFWS

Lead Office: Pacific Islands Fish And Wildlife Office

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792-9400)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Hawaiian (=ʻalala) Crow (<i>Corvus hawaiiensis</i>)	1	1.1.1.1	Increase the number of individuals in the captive flock from 56 to at least 75 over the next five years.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, `Alala Recovery Team, National Museum of Natural History, U.S. Fish and Wildlife Service, U.S. Geological Survey	Management: Propagation	Species Expert	Costs appear separately under recovery actions below for managing the captive population of `Alala
Hawaiian (=ʻalala) Crow (<i>Corvus hawaiiensis</i>)	2	1.1.1.2	Reexamine existing pedigree and founder relatedness using recently completed DNA analysis.	Partially Complete	FY 2008		San Diego Zoological Society, National Museum of Natural History	Management: Propagation	Species Expert	
Hawaiian (=ʻalala) Crow (<i>Corvus hawaiiensis</i>)	2	1.1.1.3	Protect captive flock from infection with West Nile virus by mosquito exclusion and/or immunization.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service	Management: Propagation	Species Expert	
Hawaiian (=ʻalala) Crow (<i>Corvus hawaiiensis</i>)	2	1.1.1.4	The flock manager will annually review captive flock status and new information related to captive propagation, suggest new studies and protocols, and prepare a summary for the `Alala Recovery Team.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, `Alala Recovery Team, U.S. Fish and Wildlife Service	Management: Propagation	Species Expert	
Hawaiian (=ʻalala) Crow (<i>Corvus hawaiiensis</i>)	2	1.1.1.5.1	Consider giving ineffective or inept breeders hormone implants to improve breeding and parental care.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, `Alala Recovery Team, U.S. Fish and Wildlife Service	Management: Propagation	Contract	

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	1.1.1.5.2	Allow greater opportunities for mate selection through non-breeder group socialization.	Ongoing Current	FY 2008		San Diego Zoological Society	Management: Propagation	Species Expert	Costs are for increased management expenses. Costs for aviary construction are under 1.1.2.1.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	1.1.1.5.3	Structure captive socialization to maintain several single-sex groups that can be introduced after the natal period to limit inbreeding avoidance in unrelated birds.	Ongoing Current	FY 2008		San Diego Zoological Society	Management: Propagation	Species Expert	Costs are for increased management expenses.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	1.1.1.5.4	Incorporate genes of any wild ʻAlala by temporary or permanent capture and captive breeding.	Planned			San Diego Zoological Society	Research: Population Surveys	Contract	Wild alala will be located by surveys if present
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	1.1.2.1	Build two new breeding aviaries and three new holding aviaries each year over the next five years at current facilities.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service	Management: Propagation	Contract	Accommodate an increase the number of individuals in the captive flock from 56 to at least 75 over the next five years.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	1.1.2.2	Secure funding to support increased staff, operations needs, and construction costs for item 1.1.2.1.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service	Management: General	Internal Administrative	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	1.1.2.3	Contact potential mainland facilities to provide for flock growth.	Not Started			San Diego Zoological Society	Management: Propagation	Internal Technical Assistance	If ʻAlala must be moved to the mainland, obtain authorization from the American Zoo and Aquarium Association for the ʻAlala Studbook and to develop a Species Survival Plan.

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	1.2	If wild birds are discovered and brought into captivity, maximize potential transmission of their behaviors to juvenile birds.	Not Started			San Diego Zoological Society	Management: Propagation	Species Expert	Costs are for increased management expenses.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.1	Gather additional habitat information using remote sensing, ground-truthing, and knowledge of local land managers as needed to compare release sites.	Partially Complete	FY 2008		Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, U.S. Geological Survey	Research: Habitat Status	Contract	Preliminary assessments completed. Costs are for additional studies.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.2	Establish selection criteria for release sites and choose one or more reintroduction sites.	Partially Complete	FY 2008		Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, U.S. Geological Survey	Management: Planning	Internal Administrative	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.3	Finalize Environmental Assessment for population reestablishment of the ʻAlala.	Planned			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service	Other: Regulations	Internal Administrative	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.4.1	Use Safe Harbor and Partnership Agreements and other regulatory incentive programs to increase effective management of ʻAlala habitat on private lands.	Partially Complete	FY 2008		Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Other: Information and Education	Internal Technical Assistance	Initial meetings with landowners successful, but further work needed to scope and prepare agreements.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.4.2	Use mechanisms such as conservation easements, cooperative agreements, changes in land use designation, leases, direct compensation, or purchase from willing sellers to secure habitat areas.	Planned	FY 2008		Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service	Acquisition: General	Internal Administrative	Preliminary discussions with McCandless Ranch are in progress.

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.4.3	Design and implement a program to inform the communities near release sites of the recovery program and its benefits (see action 4.3).	Planned	Prior to FY 1995		Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Other: Information and Education	Contract	Outreach coordinator position being advertised, supported by recovery funds.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.4.4	Coordinate ʻAlala recovery actions to benefit from funding and management of other endangered species programs and to assist these programs.	Ongoing Current	FY 2008		Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: Identify/Protect Foraging, Breeding and Mig Habitats	Internal Technical Assistance	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.5	Fence and remove feral ungulates from all release sites.	Partially Complete	FY 2008		Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: Predator and Competitor Control	Internal Field Assistance	Two potential release sites fenced. Fence construction ongoing at one other.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.6	Document initial vegetation condition and measure response to ungulate exclusion, comparing to pre-established criteria for release sites.	Ongoing Current	FY 2008		Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: Habitat Maintenance and Manipulation	Internal Administrative	Release sites managed by partners are being monitored.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.1.7	Increase populations of selected native plants as needed to restore food base for ʻAlala, including outplanting of sub-canopy fruit-bearing plants	Ongoing Current	FY 2008		Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: Habitat Maintenance and Manipulation	Contract	Outplanting ongoing at two sites funded by grants from FWS.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.2.1	Remove all feral cats from release sites and maintain cat-free status.	Planned			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: Predator and Competitor Control	Contract	Research ongoing to optimize cat control methods.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.2.2	Reduce rodent and mongoose populations in all release sites and maintain at less than 20 percent of initial densities.	Not Started			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Work type not yet selected	Labor type not yet selected	Aerial broadcast of rodenticide needed to implement this. Not yet a permitted activity.

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.2.3	Establish a mammal-free area within one of the release sites and document response of plant and animal communities and cost of maintenance.	Not Started			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Work type not yet selected	Labor type not yet selected	Aerial broadcast of rodenticide needed to implement this. Not yet a permitted activity.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.3.1	Establish baseline ʻIo densities at all designated release sites, and monitor yearly.	Not Started			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Research: Population Surveys	Labor type not yet selected	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.3.2	Determine by experiment if ʻIo density can be reduced by controlling rodent and game bird prey base.	Not Started			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Research: Management Techniques	Labor type not yet selected	Aerial broadcast of rodenticide needed to implement this. Not yet a permitted activity.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	2.3.3	Establish relationship between forest vegetation structure and ability of ʻIo to prey on ʻAlala	Not Started			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Research: Predation	Labor type not yet selected	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	1	2.4	Prevent alien pathogens and predators from becoming established on Hawaiʻi that would preclude recovery of ʻAlala	Ongoing Not Current	FY 2008		Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture, U.S. Fish and Wildlife Service, To be decided	Management: Disease Control	Labor type not yet selected	State of Hawaii West Nile Virus prevention system is no longer effectively operating.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.1	Using demographic models, project when birds suitable for release will be available, updating projections yearly.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, To be decided	Management: Population Monitoring	Contract	

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.2.1	Appoint a subcommittee of the Recovery Team that includes outside experts to draft a set of hypotheses, tests, and conditions for determining the effectiveness of behavioral conditioning in ʻAlala	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, To be decided	Research: Management Techniques	Species Expert	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.2.2	Experimentally test whether ʻAlala can be trained to avoid cat feces as a means to reduce risk of toxoplasmosis.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Research: Management Techniques	Species Expert	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.2.3	Experimentally test whether ʻAlala can be trained to avoid small mammalian predators.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Research: Management Techniques	Species Expert	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.2.4	Experimentally test whether ʻAlala can be trained to avoid predation by ʻIo.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Research: Management Techniques	Species Expert	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.3.1	Allow parent-rearing by well-represented pairs and compare the behavior of juveniles reared by parents to those reared using the standard puppet method.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: Captive Standards and Veterinary Care	Species Expert	Costs are for increased management expenses. Costs for associated aviary construction are under 1.1.2.1.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.3.2	Improve mutual learning opportunities by young ʻAlala as members of non-breeding flocks.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: Captive Standards and Veterinary Care	Species Expert	Costs are for increased management expenses. Costs for associated aviary construction are under 1.1.2.1.

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.3.3	Enhance opportunities for learning wild social and foraging behaviors by allowing juveniles contact with birds previously released into the wild, playing recordings of known vocalizations, and other means.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: Captive Standards and Veterinary Care	Species Expert	Costs are for increased management expenses. Costs for associated aviary construction are under 1.1.2.1.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.4.1	Examine the history of the release program from 1993 to 1999 with particular emphasis on known mortality factors, and propose changes in rearing and release methodologies to reduce mortality and increase program success.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, U.S. Geological Survey, To be decided	Research: Reintroduction	Species Expert	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.4.2	Compare the inferred social system of the ʻAlala with social systems of other corvid species (e.g., Common Raven Corvus corax, Mariana Crow Corvus kubaryi, and Grey Crow Corvus tristis), and propose release protocols that would favor early pair formation and breeding.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, U.S. Geological Survey, To be decided	Research: Reintroduction	Species Expert	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	3.4.3	Rank all potential release protocols, and any associated captive husbandry regimes, by order of likely success at the chosen release site, and prepare to implement (or actually implement) the highest priority protocol on an experimental basis.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, U.S. Geological Survey, To be decided	Research: Reintroduction	Species Expert	

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	4.1.1	Determine the financial and non-financial needs of the program, including flock management, habitat management, and public awareness programs.	Ongoing Current	FY 2008		To be decided	Management: Planning	Internal Technical Assistance	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	4.1.2	Design and implement a funding strategy adequate to meet needs.	Planned	FY 2008		To be decided	Management: Planning	Contract	We are working with Partners in Flight and the American Bird Conservancy to design a funding strategy.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	4.2	Incorporate Hawaiian cultural viewpoints into recovery planning and implementation by including one or more experts in the public portion of all ʻAlala Recovery Team meetings.	Planned			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Other: Information and Education	Internal Technical Assistance	We are working with Kamehameha Schools on cultural issues, including participation in planning.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	4.3	Communicate with local communities near release sites to prepare for toxicant use, cat control, ungulate control, and ʻAlala presence, and seek feedback from the communities for improving outreach and informational programs (see action 2.1.4.3).	Planned			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Other: Information and Education	Contract	See 2.1.4.3
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	4.4	Contract with a specialist in public/private landowner relationships to design and conduct a program to enlist landowner collaboration as outlined in action 2.1.4.1.	Planned			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Other: Information and Education	Contract	Secondary duties of person hired under 2.1.4.3

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	4.5	In coordination with the Hawaiʻi Forest Bird Recovery Team, contract with an independent public outreach specialist to meet public outreach performance milestones.	Not Started			Hawaii Department of Land and Natural Resources, Hawaii Forest Bird Recovery Team, U.S. Fish and Wildlife Service, To be decided	Other: Information and Education	Contract	Dependent on outcome of first year of outreach contractor.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	4.6	Display non-breeding ʻAlala? in one or more educational settings within the State of Hawaiʻi.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, Honolulu Zoo, U.S. Fish and Wildlife Service, To be decided	Other: Information and Education	Contract	No current ʻAlala are suitable for this role.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.1.1	Complete the inventory of field data collected from 1992 to 2001, and present to the Recovery Team.	Complete	FY 2008	FY 2009	U.S. Geological Survey	Research: Reintroduction	Contract	Field data presentation completed in 2008.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.1.2	Formulate list of relevant questions to be addressed by analysis of these data (action 5.1.1) and conduct analyses.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, U.S. Geological Survey, To be decided	Research: Reintroduction	Internal Technical Assistance	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.2	Prioritize new research based on relevance to implementation plan tasks, and modify management actions based on analysis of results.	Partially Complete	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, U.S. Geological Survey, To be decided	Management: Planning	Internal Technical Assistance	This is an iterative process of research, analysis and management design.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.3	Hold Recovery Team meetings once a year on a fixed schedule, and as may be needed should time sensitive issues develop requiring immediate discussion.	Ongoing Current	FY 2008		San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, To be decided	Management: Planning	Internal Technical Assistance	Recovery team meetings are currently being conducted by conference calls.

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Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.4	Establish a recovery implementation working group.	Planned			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, To be decided	Other: Administration	Species Expert	Discussions with recovery team ongoing as to form and membership of this group.
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.5	Hire a person whose sole responsibility will be to coordinate implementation of recovery actions for the ʻAlala and/or dedicate at least one full-time employee to oversee recovery implementation.	Ongoing Current	FY 2008		Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Management: General	Species Expert	Program currently has a dedicated recovery biologist (J. Burgett)
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.6	Adopt performance milestones for the Recovery Team, the Service, and private contractors, measure annually, and propose corrective actions if milestones are not achieved.	Not Started			San Diego Zoological Society, Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, To be decided	Management: General	Internal Technical Assistance	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.7	If appropriate, beginning in early 2012, prepare Implementation Plan for 2014 through 2018.	Not Started			Hawaii Department of Land and Natural Resources, ʻAlala Recovery Team, U.S. Fish and Wildlife Service, To be decided	Work type not yet selected	Labor type not yet selected	
Hawaiian (=ʻalala) Crow (Corvus hawaiiensis)	2	5.8	In 2012 obtain a thorough, impartial assessment of progress toward stated goals and identify impediments to goal achievement. Incorporate this review into the next Implementation Plan.	Not Started			Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, To be decided	Work type not yet selected	Labor type not yet selected	